

January 23, 2006

RE: Final Environmental Assessment for Blahnik Construction, Inc., JCSL North Gravel Pit

Dear Reader:

The public comment period on the draft environmental assessment (EA) for the proposed JCSL North Gravel Pit ended on October 24, 2003. DEQ received 11 comment letters on the draft EA. For convenience, the comments have been grouped into similar categories and paraphrased as necessary, as shown in the first part of the final EA, followed by DEQ's responses. The final EA includes changes in text from the draft EA; that clarify text that was ambiguous, unclear or incomplete, correct grammatical errors, or reflect commitments that Blahnik made in its Plan of Operation to the mitigating measures that were described in the draft EA. Also, a land use map has been added.

If any person wishes to challenge DEQ on the final EA for the proposed Blahnik JCSL North opencut mining operation, he or she may do so as follows. The Montana Environmental Policy Act, which provides for the legal authority and basis for the preparation of EA's and environmental impact statements by state agencies, states at 75-1-201(6), MCA: "A challenge to an agency action under this part may only be brought against a final agency action and may only be brought in district court or in federal court, whichever is appropriate. Any action or proceeding challenging a final agency action alleging failure to comply with or inadequate compliance with a requirement under this part must be brought within 60 days of the action that is the subject of the challenge."

DEQ has determined that Blahnik Construction Inc.'s application is in compliance with the provisions of the Opencut Mining Act and its pursuant rules. Therefore, DEQ is approving Blahnik's application and will issue the requisite mining permit. Regarding this approval, the Opencut Mining Act at 82-4-427, MCA provides: "(1) A person who is aggrieved by a final decision of the department under this part is entitled to a hearing before the board [of Environmental Review], if a written request is submitted to the board within 30 days of the department's decision. (2) The contested case provisions of the Montana Administrative Procedure Act, Title 2, chapter 4, part 6, apply to a hearing held under this section." Requests for a hearing under this provision must be submitted to: Secretary; Board of Environmental Review; P.O. Box 200901; Helena, MT 59620-0901.

The enclosed final EA is also available at <http://www.deq.mt.gov/ea/opencut.asp>.

Please contact Rod Samdahl at 406-755-8985 (e-mail rsamdahl@state.mt.us) or me if you have any questions.

Sincerely,

Neil Harrington, Chief
Industrial and Energy Minerals Bureau
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NH/nh

Enclosure

FINAL ENVIRONMENTAL ASSESSMENT

For Proposed JCSL North Gravel Pit

Blahnik Construction, Inc.

January 19, 2006

This environmental assessment (EA) is required under the **Montana Environmental Policy Act (MEPA)**. An EA functions to identify, disclose and analyze the impacts of an action, in this case operating a gravel pit over which the state must make a decision, so that an informed decision can be made. MEPA sets no environmental standards even though it requires analysis of both the natural and human environment. This document may disclose many impacts that have no legislatively required mitigation measures or over which there is no regulatory authority. The state legislature has provided no authority in MEPA to allow DEQ or any other state agency to require conditions or impose mitigations on a proposed permitting action that are not included in the permitting authority and operating standards in the governing state law, such as the Opencut Mining Act, the Clean Air Act of Montana, or any other applicable state environmental regulatory law. Beyond that, a company may agree to voluntarily modify its proposed activities or accept permit conditions.

The state law that regulates gravel-mining operations in Montana is the **Opencut Mining Act**. This law and its approved rules place operational guidance and limitations on a project during its life, and provides for the reclamation of land subjected to opencut materials mining. This law requires that a surety bond, cash deposit or other financial instrument be submitted to the state to cover the complete costs of reclaiming the site to its approved, post-mining land use.

The permit decision cannot be based upon the popularity of the project, but upon whether or not the proponent has met the requirements of the Opencut Mining Act, pursuant rules, and other laws pertaining to his proposed actions.

Type and Purpose of Action: Blahnik Construction, Inc. (now owned by Helena Sand and Gravel) proposes to crush, screen, stockpile, and transport 600,000 cubic yards of sand and gravel and batch hot asphalt from this 19.9-acre site located 3 miles north of Hamilton. If the application is approved, the applicant would initiate mining activities immediately thereafter. The site would be mined to a depth of 30 feet, by first mining the site down to just above the water table from east to west and then mining down the balance of the proposed depth from west to east (Attachment 1). Once the slope above the Woodside Ditch was removed, the applicant would leave a 20-foot buffer in place to protect the irrigation ditch. The site would be reclaimed to a 12-acre pond for wildlife and 7.9 acres of land surrounding it that would be suitable for commercial and residential use. The site would be reclaimed by grading the land fairly flat, contouring the slopes of the pond, re-soiling the area above the water, and seeding the topsoil with grasses (Attachment 2). The slopes of the pit above the water table would be reduced to no more than 3:1, following the Montana Department of Environmental Quality (DEQ) pond guidelines. Reclamation would be completed in approximately December of 2020.

Location: SW¼ SE¼, Section 1, T6N, R21W
Ravalli

County:

CITIZEN DRAFT EA COMMENTS AND DEQ RESPONSES

[Aesthetics](#)
[Air Quality](#)
[Noise](#)

[Proximity to Orchard Drive](#)

[Permitting Process](#)

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1. **Aesthetics:** This gravel pit will just be another eyesore along Highway 93. Ground and trees serving as visual barriers between the residential areas and US Highway 93 will be gone when the rock is removed. We would like a line of dense trees and shrubs similar to a wind belt planted west of the proposed berm. These plantings should be put in place now so the plant barrier would help absorb sound and detract from the sterile visual impact of seeing the ridge of bermed topsoil when operations begin later.

Response: This proposed operation would not be located immediately adjacent to US Highway 93. The operation would only be located west of the irrigation ditch, except for an access road across the ditch in the northeast corner of the permit area. The irrigation ditch and any vegetation that might be growing along the ditch or the land east of the ditch would not be disturbed. Topsoil and overburden berms would be placed along the edge of the north, south and west permit boundaries. Also, Blahnik Construction has agreed to place topsoil and overburden berms around the residence in the northwest corner of the permit area. Under the agency mitigation agreed to by the company, the berms would be 8 feet above the adjacent property or road grade with side slopes at 2:1 or less. Trees and shrubs would be planted at the base of the berms. DEQ cannot require the plants to be installed prior to operation, but the planting would be done as soon as possible after the mining permit is issued. Blahnik Construction has indicated that it would construct the berms such that they conform to DEQ standards including the planting of vegetation (Wilusz 2003).

2. **Air Quality:** This historically agricultural land will be turned into a detrimental health hazard pit of dust and noise. The dust will be a health hazard for humans and livestock that are a source of income for some people in this area. This proposed operation will spoil the air. I am concerned about the impacts of dust generated by the operation on the surrounding area. I can smell the tar and asphalt from Mr. Blahnik's other operation south of the proposed site. When this happens I cannot open my bedroom windows at night. Will this get worse with an operation even closer to our residence?

Response: There would be an increase in particulate matter. Dozers, loaders, crushers and trucking equipment typically cause dusty conditions in disturbed soil sites. Dust would be controlled around the site by water truck or sprinklers. Crushers are regulated for emissions and the equipment used must be tested and approved.

The DEQ Air and Waste Management Bureau (AWMB) sets opacity limitations on crushing/screening operations and requires them to perform a method 9 (opacity) test. The AWMB also conducts inspections to ensure that all sources comply with their permits (all permit limitations and conditions). The AWMB does not, however, require this industry (portable crushing/screening facilities which are considered minor sources of emissions by industrial standards and have potential emissions of less than 100 tons per year of any pollutant) to conduct any continuous emissions monitoring. The source is required to comply with both state and federal ambient air quality standards.

Although Blahnik Construction has removed its proposal for an asphalt plant at this site, please note the following regarding regulation of asphalt plant emissions. The AWMB requires permits for asphalt plants that have a potential to emit more than 15 tons per year (TPY) of any airborne pollutant, other than lead (Montana Rules - ARM 17.8.743(1)(b)). The lead permitting threshold is 5 TPY for new sources and 0.6 TPY for modified sources (ARM 17.8.743(1)(a)).

The AWMB writes permits for asphalt plants. Generally, the AWMB establishes permit limitations on facility production and/or hours of operation of the equipment to minimize emissions. The use of such limitations to regulate the criteria pollutants (total particulate matter (PM), particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀), oxides of nitrogen (NO_x), volatile organic compounds (VOC), carbon monoxide (CO), and oxides of sulfur (SO_x)) also minimizes the amount of hazardous air pollutant (HAP) emissions. The facility used may also use pollution controls that could further reduce emissions, and pollution control equipment may be specified as an operational requirement in the permit.

The amount of HAP's from an asphalt plant can be calculated by using the U.S. Environmental Protection Agency's emission factors for batch mix and drum mix asphalt plants (currently AP-42, Table 11.1-9 through Table 11.1-16). Using these tables, the calculation of HAP's is based upon the amount of product a facility is allowed to produce and the method through which the product is generated.

Montana's standards for acceptable emissions are health-based standards and comply with federal guidelines. Asphalt plants that are permitted with the state are permitted in the manner described above and typically generate relatively small amounts of HAP's in relation to the corresponding major source threshold. The major source threshold for HAP's in the Federal Clean Air Act, section 112(a)(1), is defined as 10 tons per year or more of any HAP's or 25 tons per year or more of any combination of HAP's.

The operator is required to meet both the testing and operational requirements of his air quality permit. AWMB may require additional testing. The potential penalty for a violation is \$10,000 per day per violation. AWMB performs inspections of these facilities and may initiate enforcement action on those facilities that are in violation of the air quality rules and standards contained in their air quality permits.

3. **Noise:** Ground and trees serving as noise barriers between the residential areas and US Highway 93 will be gone when the rock is removed. This proposed operation will create a lot of noise. Mr. Blahnik currently operates an aggregate pit approximately 2 miles south of this proposed site, and he ran his stone crushing operation there 24 hours a day for several months. Those living closest to the operation were not notified that this was to occur, and when the noise became disturbing he would confine operation to normal working hours. We would like a line of dense trees and shrubs similar to a wind belt planted west of the proposed berm. These plantings should be put in place now to help protect against the noise and dust levels when operations begin later.

Response: The standard hours of operation imposed by the state are 7 a.m. to 7 p.m. Monday through Friday for mining, crushing, and hauling of gravel and generally 7 a.m. to 5 p.m. on Saturdays for hauling. Deviations from that standard must be requested and rationale for the variance provided by the operator. Provisions allow for extended hours of operation for 15 days but each period of extended hours must be separated by at least 30 days. Blahnik has indicated crushing would operate during the standard hours. See response to comment #1 above for information regarding the berms.

Aesthetics, including noise, are not regulated with numerical standards under the Opencut Mining Act and regulations or other Montana laws. However, the opencut regulations can require construction of soil berms, planting of vegetative screens, and reasonable limitation of operating hours to mitigate visual and/or noise impacts to nearby neighbors. Normally these mitigation measures would be implemented if residents are within 500 feet to 1,000 feet of a major piece of equipment, such as the crusher, asphalt plant, etc. Backup alarms, the amount of light in a working

yard and other annoyances to the public at large are required for safety of employees by the Occupational Health and Safety Administration or the Mine Safety and Health Administration.

4. **Operating Concerns:** How close will the operation come towards and the berms be placed to Orchard Drive? Mr. Blahnik has indicated his intention not to process the gravel all the way to the road, but at this time there is no firm commitment as to exactly what this means in actual distances. It would be helpful if this would be clarified and committed to at this time so we can see how close the operation will be coming to our property.

Response: A temporary access to Orchard Drive would be implemented until the mining is sufficient to allow moving the crusher to a lower elevation requiring access across the irrigation ditch. The berms would be placed 15 to 20 feet from the shoulder of Orchard Drive. However, vendors with local deliveries could continue to use the Orchard Drive secondary access road (Wilusz 2003).

5. **Permitting Process:** A public hearing is necessary so that all concerned Bitterrooters may give comments regarding the proposed operation. An environmental impact statement is needed.

Response: A public hearing is not planned at this time. When comments are received from the public on a draft environmental assessment (EA), DEQ may consider a hearing depending on the issues raised and the amount of interest expressed. At this time, DEQ does not believe that an environmental impact statement is required to analyze the impacts of this proposed operation.

6. **Property Values:** This proposed operation will definitely lower our property values.

Response: Sale or market value of adjacent property may be negatively affected by the presence of a gravel pit, but DEQ has no specific information on this issue at this site. In any case, under the Opencut Mining Act, DEQ has no authority or jurisdiction over property value issues.

The Legislature has specifically limited DEQ's authority to issues relating to taxable value. Under Montana law, an administrative agency, such as DEQ, has only those powers granted to it by the Legislature through enactment of statutes. The Legislature has given DEQ two means of mitigating the effects of gravel operations on adjacent property. First, DEQ has authority to protect air quality; to minimize noise and visual impacts to the degree practicable through use of berms, vegetation screens, and limits on hours of operation; and to otherwise prevent significant physical harm to adjacent land. Second, in order to protect and perpetuate the taxable value of property, land on which operations are completed must be graded and revegetated. The State contracted for a study to determine "whether the existence of a gravel pit and gravel operation impacts the value of surrounding real property." The study is entitled: "Gravel Pits: The Effect on Neighborhood Property Values," by Phillip J. Rygg, MAI, Appraisal Research Group, Kalispell, Montana, February 1998. Rygg's study involved some residential property near two gravel operations in the Flathead Valley. He concluded that these measures were effective in preventing decrease in taxable value of those lands surrounding the gravel pits. In his review of the study, Jim Fairbanks, Region 3 Manager of the Montana Department of Revenue, Property Assessment Division said:

"In the course of responding to valuation challenges of ad valorem tax appraisals, your reviewer has encountered similar arguments from Missoula County taxpayers regarding the presumed negative influence of gravel pits, BPA power lines, neighborhood character change, and traffic and other nuisances. In virtually ALL cases, negative value impacts were not measurable. Potential purchasers accept newly created minor nuisances that long-time residents consider value diminishing."

Many residences have been constructed in the vicinity of the proposed site. A crushing and asphalt batching facility has the possibility of reducing the attractiveness of home sites to potential homebuyers seeking a quiet, rural/residential type of living environment. This operation could also affect the marketability of existing homes, and therefore cause a reduction in the number of interested buyers and may reduce the number of offers on properties for sale. This reduction in

property turnover could lead to a loss in realtors' fees, but should not have any long-term effect on taxable value of property. If homeowners believe their property values are decreased because of a gravel operation, they may appeal to the County and the State for tax adjustment. There is a performance bond in place that would allow DEQ to reclaim the land under permit if the operator is unable to do so, which would protect taxable value. DEQ is required by law to see that the work is done, as specified in the Plan of Operation.

- 7. Traffic and Public Safety:** The proposed operation will result in additional traffic on Orchard Drive. I am concerned about the safety of the people and children in the area.

Response: The primary access to the proposed site would be from U.S. Highway 93 through the Blahnik Construction office and shop areas and across the irrigation ditch in the northeast corner of the proposed permit area. No permanent primary access road is proposed onto Orchard Drive and there should be no permanent long-term increase in traffic as a result of this proposed operation although traffic patterns along the highway may differ slightly.

Blahnik Construction would construct and use a temporary access road from Orchard Drive until sufficient material has been mined to allow moving the crusher to the lower elevation and require access from across the irrigation ditch; Blahnik has agreed to move through that process as quickly as possible. During the time period the company is in the process of reaching that point, traffic on Orchard Drive would increase. Vendors with local deliveries could continue to use the Orchard Drive secondary access road throughout the operation if that route was a more convenient or direct way to get deliveries to the site. However, Blahnik Construction anticipates that most deliveries would be made off of U.S. Highway 93.

Traffic would shift from Blahnik's existing operation to the proposed site when the existing operation is mined out. The topsoil and overburden berms would function to some extent as a fence around the property to discourage people from entering the site. Neighbors on both sides of the proposed mining area have already fenced off the irrigation ditch so it is not accessible for bicyclists and pedestrians (Wilusz 2003). After the site is reclaimed, there would be a small pond left, which would pose as much of a hazard to people and children as a stockpond.

- 8. Water Quality and Quantity, Ground Water Table, and Irrigation Water:** The water table is very fragile; this operation will affect the local aquifer. Adjacent landowners will lose not only potable water but also irrigation water. This proposed operation will ruin our water supply. Please survey what this proposed operation will do to the water table in this area. It will affect the water flow to many farmers in the area and cause substantial loss of irrigation water. A neighbor north of Blahnik's existing operation had her well dry up as a direct result of the digging of that pit.

Response: Blahnik proposes to leave a 20-foot buffer between the workings and the ditch to protect the integrity of the ditch. DEQ cannot require any distance greater than that needed to protect the integrity of the ditch. At this time Blahnik Construction does not plan on lining the irrigation ditch. A similar geometry exists at the current JCSL Pit with no adverse effects on the ditch or its water volume. In fact, water from the pond leaches into the ditch resulting in a net gain of water for the irrigation ditch (Wilusz 2003).

The ground water is very shallow in this area, and if a well is completed at or above the level of the pit (i.e., completed in the same aquifer as the pit intercepts), then it is possible for the water level in a well downgradient of this site to be affected by an operation such as is proposed if the pit was to be dewatered. However, the operation would not dewater its working pit. It is assumed that the ground water flow is towards the river. The majority of the closest wells are not located between the proposed operation and the Bitterroot River and are, therefore, also upgradient from the proposed operation. Many of the wells are deeper than the proposed operation would be dug, although the static water levels may be above the elevation of the deepest mine workings, but not necessarily above the reclaimed surface. Blahnik proposes to leave a 12-acre pond on the site after mining, and the rest of the land would remain above the water table. There should be no reduction in potable or

irrigation water supplies. Blahnik Construction is proposing to only use as much water as required to control dust. Crushing operations at this site would primarily occur in the fall and winter since highway construction occurs primarily in the spring and summer (Wilusz 2003).

9. Wildlife: The proposed operation will affect our non-human neighbors.

Response: Cumulatively, the residential, commercial, and industrial growth in the Bitterroot Valley would displace wildlife because previously undisturbed lands, including pasture lands, are subdivided and structures are built or the land use otherwise changes dramatically as with a sand and gravel pit. The site in question, however, is already sandwiched between a commercial area to the east and residential areas surrounding the other sides. There would be some displacement of animals that pass through the area to and from the river as well as small mammals and birds that reside on the site during operation of the pit. It is not anticipated that this proposed operation would have any long-term effect on wildlife in the area, because it would be reclaimed to pasture grasses with a pond. The site could then be developed for residential and commercial uses by the landowner. See Sections 5 and 6 in the main body of the EA below for further discussion of impacts to wildlife and wildlife habitat.

10. Zoning and Land Use: The company owns property north of the existing pit, so there is nothing to stop them from moving north in a few years into my back yard. I haven't paid on my property for 20 years only to have a gravel pit next door. Aggregate pits should not replace historically agricultural land and its surrounding environment. Just because Ravalli County has no zoning codes at the moment does not mean that we can do anything we want, anytime we want, anyway we want to do it, without considering the consequences to our neighbors, wildlife, and landscape.

Response: The land on which the proposed operation would be located is unzoned according to the Ravalli County Planning Office. Without zoning, the county has no control over the specific use of a piece of property, regardless of its proximity to residential properties. As long as the applicant has the legal right to mine there is nothing within the scope of the Opencut Mining Act which can prevent the proponent from applying and, if the application meets the requirements of the Opencut Mining Act, obtaining a permit to mine. The DEQ-Opencut Mining Program has no regulatory authority over land use and zoning issues.

N = Not present or No Impact will occur.

Y = Impacts may occur (explain under Potential Impacts).

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE: Are fragile, compactible or unstable soils present? Are their unusual geologic features? Are there special reclamation considerations?	[N] The proposed operation is located in a glacial alluvial valley in sands and gravels of the Quaternary to Recent geologic age. The proponent would mine to a depth of 30 feet, which is well below the low water table. The mine and facility areas would have all available soil stripped and salvaged, averaging about six inches. The soil is a silty loam. Soil microbes should re-colonize the soils following replacement. There are no fragile, compactible, or unstable soils present, unusual geologic features, or special reclamation considerations. The reclaimed slopes would be reduced to a 3:1 or flatter angle above the water table and would follow the DEQ guidelines for a fishery pond.
2. WATER QUALITY, QUANTITY AND DISTRIBUTION: Are important surface or groundwater resources present? Is there potential for violation of ambient water quality	[Y] The Woodside Irrigation Ditch is located along the east side of the permit area but no permanent effects to the ditch are expected. The site would be mined with typical equipment such as dozers, loaders, excavators and scrapers. The terrace slope above the Woodside

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
standards, drinking water maximum contaminant levels, or degradation of water quality?	<p>Irrigation Ditch would be removed down to the level of the ditch and than a 20-foot buffer between the ditch and the deeper pit workings would be left to protect the integrity of the ditch. The ditch might be expected to leak as it is unlined and the water would discharge into the mine pit once the elevation of the mine workings was below that of the ditch.</p> <p>There are 64 water wells registered in Section 1 and 55 wells in Section 12 (Montana Bureau of Mines and Geology 2002). The wells in Section 1 average 58 feet in depth, have static water levels of 24 feet and yield 47 gallons per minute. The wells in Section 12 average 85 feet in depth, have static water levels of 32 feet and average 125 gallons per minute. There is a general trend in the area for shallow, high-yield wells that provide drinking and agricultural water from sands and gravels associated with the shallow river valley aquifers.</p> <p>It is assumed that the ground water flows towards the river. The majority of the closest wells are not located between the proposed operation and the Bitterroot River and are, therefore, also upgradient from the proposed operation. Many of the wells are deeper than the proposed operation would be dug, although the static water levels may be above the elevation of the deepest mine workings, but not necessarily above the reclaimed surface. Blahnik proposes to leave a 12-acre pond on the site after mining, and the rest of the land would remain above the water table. There should be no reduction in potable or irrigation water supplies.</p> <p>The applicant proposes to discharge water from the settling ponds into the Woodside Irrigation Ditch until the elevation of the pit and thus the settling ponds were below the ditch. There is the potential for this water to be higher in suspended solids than the water in the ditch or to have other pollutants from the operating equipment (spilled fuel from refueling, oil leaks, etc.). This discharge must be covered by a Montana Pollution Discharge Elimination System general permit for sand and gravel operations. Blahnik must apply for and obtain this permit prior to discharging any water into the ditch. The permit would have limits for suspended solids and other constituents to protect the quality of the water in the ditch.</p> <p>The mine would intercept potable water as it created the pond, but requirements to protect the water quality would be in place. Precautions would be taken to maintain clean water in the mine such as berming and ditching to prevent off-site drainage, keeping fuel storage out of the permit area, and off-site disposal of all refuse, petroleum products and other types of toxic material. Nevertheless, the proponent would need to obtain a Stormwater Discharge Permit from DEQ that would be in effect until such time as all stormwater runoff would be contained within the permit boundary and the pit. Blahnik would implement best management practices to prevent any off site erosion or sedimentation.</p>

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
	<p>The crusher and water truck may use 20,000 gallons/day during full operation on a hot, dusty day. Water used for dust control at this scale does not need a water right or change in beneficial use permit from the Montana Department of Natural Resources and Conservation (DNRC). According to the Missoula Water Rights Office of DNRC, dust control water use is considered, like fire suppression, to be ancillary and for the common good of the public.</p> <p>Creation of a pond as part of the reclamation plan would require the granting of a water right from DNRC.</p> <p>Cumulative: The Bitterroot Valley continues to grow as new subdivisions and commercial structures are proposed and built. The new residences and structures will place increasing pressure on area ground water aquifers to provide potable water. Some new gravel pits are being proposed and existing gravel operations are proposing expansions to provide the gravel, cement and asphalt needed for construction of these new developments and roads. The increase in sand and gravel operations places demands on ground water and increases the possibility of impacting the quality and quantity of ground and surface waters in this area.</p>

IMPACTS ON THE PHYSICAL ENVIRONMENT

RESOURCE

3. AIR QUALITY: Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?

[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES

[Y] Air quality would be degraded, but the proponent would have to comply with air quality standards and an Air Quality Permit from the DEQ would be needed for the crusher and any asphalt plant that might be brought on site. Air quality standards are based upon the Clean Air Act of Montana and pursuant rules and are administered by the DEQ Air and Waste Management Bureau.

DEQ has an Environmental Protection Agency (EPA)-approved air quality program. Permits and permit conditions are established to promote compliance with all applicable air quality rules and standards. These rules and standards are designed to be protective of human health and the environment.

DEQ, in an effort to protect air quality, operates an air quality program that includes permitting, compliance, and enforcement staff. The air quality program staff members are available to answer any specific questions of interested parties.

- The Air Permitting Section (Deborah Skibicki (406-444-1472)) is available to answer any questions on air quality permits for a specific company and the operating conditions that are established in those permits.
- The Air Compliance Section (Dan Walsh (406-444-9786)) is available to answer questions in regard to operations of a facility in a particular area and the inspections and testing that may be required for the facility.
- The Case Management Bureau of the Enforcement Division (Frank Gessaman (406-444-3390)) is able to answer questions on the compliance history of a facility. This bureau is also responsible for enforcing the clean air laws, should violations of those laws occur.

Fugitive dust is that which blows off the pit floor, stockpiles, gravel roads, farm fields, etc., and is regulated by the Air and Waste Management Bureau (AWMB). It is considered to be a nuisance but not considered to be harmful to health. It is regulated at mine sites (but not roads or fields) by gauging opacity - measuring visibility through the dust plume. The AWMB also conducts inspections to ensure that all sources comply with their permits (all permit limitations and conditions). The AWMB does not, however, require this industry (portable crushing/screening facilities which are considered minor sources of emissions by industrial standards and have potential emissions of less than 100 tons per year of any pollutant) to conduct any continuous emissions monitoring. The source is required to comply with both state and federal ambient air quality standards.

The crusher would have a water bar to help control the dust generated by the crushing of rocks. Blahnik also proposes to use a water truck to help control dust within the permit area. The topsoil and overburden berms would be vegetated to minimize both air and water erosion.

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
	<p>Air quality permits would be required on all of the processing equipment before installment. Machinery, such as generators, crushers and asphalt plants, are individually permitted for allowable emissions. Best Available Control Technology (BACT) is the usual standard applied. Thus, the crusher would be equipped with water spray bars that would use about 500 gal/day. Asphalt plants must be equipped with bag houses or other pollution control equipment to keep them in compliance with their individual permits. However, Blahnik removed the asphalt plant from the permit application. All air quality laws and rules would have to be followed.</p> <p>No designated Class I airshed exists in the site area.</p> <p>Cumulative: There are several existing sand and gravel operations within 5 or 6 miles of the proposed operation. Dust and odors from these pits have cumulatively contributed to a decline in overall air quality, especially during the hot, dry summer months when these businesses are most active. The general increase in residential and business use in the Hamilton area has contributed to this decline as well. A substantial increase in small car and light truck traffic on private driveways and unpaved roads has caused a substantial amount of particulates to enter the air in the general area surrounding the pit. Paving of Orchard Drive has reduced dust generated by traffic on that road. Recent increases in domestic horses in the area have increased concentrations of dust, manure, odors and flies. Historic use of the agricultural land in the area by plows, discs, seed drills, swathers, combines, bailers, etc. have always contributed to the dusty conditions in the area during summer months, and there are no requirements for farmers and ranchers to control and reduce dust and odor emissions created by these activities.</p>
<p>4. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be permanently altered? Are any rare plants or cover types present?</p>	<p>[Y] Vegetation on the site of the proposed operation consists of planted pasture grasses including smooth brome, various wheatgrasses and quackgrass, and covers 80 percent of the ground. No rare plants have been identified.</p> <p>Trees and shrubs would be planted at the base of the topsoil and overburden berms along the perimeter of the permit area. These plants would be species typically used for windbreaks. Blahnik would work with DEQ and the Conservation District on the final species selection and planting requirements. The trees and shrubs would be planted as soon as possible after permit approval.</p> <p>Twelve acres of the land would be converted into a pond when finished, removing those acres from hay production. Some wetlands may develop in the reclaimed pond shallows with the invasion of cattails and willows over time. The seed mix for planting around the pond is included in Attachment 3 and would facilitate the development of riparian areas and increase the potential for use by wildlife in the area. If the site is developed for residential or commercial use after reclamation, then the vegetation would most likely be changed to be</p>

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
	<p>appropriate for the new use of the property.</p> <p>Spotted knapweed plants are present along the perimeter of the proposed permit area and along the slope above the irrigation ditch. There is also some sulfur cinquefoil within the permit area. Blahnik proposes to have a commercial applicator control these noxious weeds with chemicals according to its approved Noxious Weed Control Plan (Ravalli County Weed District 2000).</p>
<p>5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish?</p>	<p>[N] The site is utilized by deer, elk, and various other species of mammals, including raccoons, foxes and coyotes. The site and surrounding areas are used by eagles, herons, osprey and other raptors as well a migrating water fowl and other birds common to the Bitterroot River ecosystem. This gravel pit would temporarily displace wildlife, but is not expected to have any permanent effect on them, as there is other suitable habitat in the area. There might be increased use of the site by migratory waterfowl and the landowner could plant fish in the pond.</p> <p>Human use of the area has intensified in the past three or four decades with increasing residential and commercial activity. Human use and development may have impacts on wildlife as significant as or even greater than mining.</p> <p>Blahnik would plant a selection of suitable riparian and wetland species along the shoreline of the reclaimed pond to create wildlife habitat to support the proposed post-mining land use. The seed mix is included in Attachment 3.</p>
<p>6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES: Are any federally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?</p>	<p>[Y] A ground search was conducted and no threatened or endangered species or identified habitats were found on the site.</p> <p>Bull trout and westslope cutthroat trout live, migrate, and spawn in the Bitterroot River and its tributaries. However, the proposed site is at least ½ mile from the nearest natural surface water features and the potential for impacting these fish species is very remote. Other sensitive animal species and one plant species have been identified in the vicinity of the proposed expansion, but none are within the proposed site. A fringed myotis, a bat species of special concern, was identified in Section 6 about a mile north of the proposed site in 1961 (Natural Heritage Program 2001). In addition, a state champion tree, the largest recorded plains cottonwood in the state of Montana, is located adjacent to the Daly Mansion about 4 miles south of the proposed site. The proposed expansion should have no impact on these plant and animal species as they are not located within the proposed expansion area and suitable habitat is not available there.</p>
<p>7. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?</p>	<p>[N] A cultural resource ground survey and field inspection was conducted and no resources were found on the ground surface. The inspection was done using pedestrian transects of the site and did not note any resources at the time (Samdahl 2000). According to the Montana State Historic Preservation Office (SHPO 2002), there is a brick residence associated with a lumber yard in the NE ¼ of Section 1</p>

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
	<p>that is eligible for the National Historic Register, but this site is outside the proposed permit area and would not be affected by the proposed operation. Portions of the Bitterroot Railroad are also eligible for listing, but the railroad is located east of the highway and, therefore, would not be affected by the proposed operation.</p> <p>Given the history of this area, lands in close proximity to the Bitterroot River may contain cultural or historic artifacts and features indicating Native American use or perhaps even features from a Lewis and Clark expedition campsite. The features may tend to be subsurface having been covered by material laid down by the river during flood events over time. Blahnik would be responsible for reporting any cultural and historic artifacts to the SHPO whenever they are discovered during mining and to protect those sites until a determination can be made regarding the sites.</p>
<p>8. AESTHETICS: Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?</p>	<p>[Y] The proposed operation is located on a river terrace along Highway 93 in an industrial and rural/residential area, and would be very visible to traffic along the highway. The project is long-term with reclamation being planned for far into the future. The pit would be visible to residences and other commercial businesses in the area. Grass vegetated topsoil and overburden berms would be placed along the north, south and west sides of the mine area to provide sight and sound barriers to buffer impacts to the surrounding residences and to traffic along the county road to the west. The crusher would operate five days per week, Monday through Friday, from 7:00 A.M. to 7:00 P.M. Thus, there is some potential for the noise to disturb people in nearby residences.</p> <p>People living in the vicinity of places where heavy equipment is working are particularly annoyed by backup alarms. Sound waves bend around objects. Since vegetation tends to absorb or disperse sound, the vegetative screen along the topographic barriers provided by raised berms would lessen the noise from the project but would not eliminate it. Humid air, which often occurs in the morning, carries sound farther, and a lack of background noise at that time of day seems to make sounds even louder. During the summer, residents spend more time outside, and often keep doors and windows open for ventilation. In effect, the noise is more bothersome in the mornings and in the summer.</p> <p>Under agency mitigations adopted by the applicant, trees and shrubs would be planted along the base of the berms between the permit boundary and the berms to provide additional screening. The applicant would need to work with DEQ to select the species to be planted and obtain approval of the final planting design. Berms would also have to be constructed around the residential property in the northwest corner of the permit area. The berms must be at least 8 feet higher in elevation than the adjacent land or road grade and have side slopes of 2:1 or less. Blahnik has agreed to implement all of these measures.</p>
<p>9. DEMANDS ON ENVIRONMENTAL RESOURCES</p>	<p>[N]</p>

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
OF LAND, WATER, AIR OR ENERGY: Will the project use resources that are limited in the area? Are there other activities nearby that will affect the project?	
10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES: Are there other studies, plans or projects on this tract?	[Y] An EIS was completed for the proposed widening of U.S. Highway 93 from Hamilton to Lolo, Montana (US Department of Transportation-Federal Highway Administration and Montana Department of Transportation 1997) . A small portion of the eastern side of the permit area lies within the lands covered by that EIS. This EIS did not identify any impacts to this specific site, but did provide a good discussion on historic and cultural sites in the vicinity, which are included above in Section 7. Since no site specific concerns were identified, the impacts would generally be similar to those along the entire construction zone with typical mitigations to control erosion and revegetate the roadside disturbances once the road had been widened.

IMPACTS ON THE HUMAN POPULATION	
RESOURCE	POTENTIAL IMPACTS AND MITIGATION MEASURES
11. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?	[N] The applicant must comply with OSHA and MSHA regulations and proper precautions would be taken to avoid accidents. There might be an increase in traffic in this area along U.S. Highway 93, but there should not be a permanent increase in traffic along Orchard Road as there would be no permanent access to and from that road for gravel trucks. However, the Orchard Drive entrance would continue to be used for local deliveries with typical two and three-axel trucks. During the early stages of pit construction there would be an increase in traffic onto Orchard Drive until such time as traffic could be redirected onto U.S. Highway 93. Blahnik Construction would need to remove sufficient material to allow the construction of the irrigation ditch crossing before it could access the site via U.S. Highway 93; Blahnik has agreed to move through that process as quickly as possible. Blahnik has another operation just south of this proposed site and traffic would most likely shift from one site to another; increases in project-related traffic would more likely be related to the need to supply material for large jobs rather than the shift in sites.
12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?	[Y] There are commercial and industrial activities on adjacent and nearby lands, although the proposed site is currently vegetated in grasses and is used for hay. This hayfield would be taken out of grass production and put into industrial use. Following reclamation, it would be put into pond surrounded by pasture grasses that would be suitable for commercial/residential development. An existing land use map is included in Attachment 4.
13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.	[N] This new site would only extend the applicant's long-term reserves of material in this area. No new jobs or employees would be created.
14. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will	[N] This proposed operation would not create new tax revenues, but would allow for the continuation of tax revenues generated by the

IMPACTS ON THE HUMAN POPULATION	
RESOURCE	POTENTIAL IMPACTS AND MITIGATION MEASURES
the project create or eliminate tax revenue?	applicant's current operation when that site is mined out.
15. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc) be needed?	[N] The site would require periodic site evaluations, but these would be done in conjunction with other operations in the area.
16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	[N] County zoning clearance has been obtained (Ravalli County Planning Board 2000). The proposed site is unzoned.
17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES: Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?	[Y] U.S. Highway 93 provides the primary route up the Bitterroot Valley from Missoula south to the Idaho border and parallels one portion of the Lewis and Clark Trail as well as a portion of the Nez Perce Trail. There are numerous access points to the Bitterroot National Forest from the highway. The Selway-Bitterroot Wilderness lies to the west and there are a few access roads to its boundaries from U.S. Highway 93. There are also access roads to the boundaries of the Pintlar Wilderness Area to the east in the Anaconda Mountains. South of Darby, Montana, a road leads southwest to Painted Rocks State Park and Fort Owen State Park lies just south of Stevensville along Route 203 on the east side of the Bitterroot River. Other wilderness and recreational areas in the valley include Traveler's Rest National Historic Monument, the Lee Metcalf National Wildlife Refuge, the Daly Mansion, and a couple of historic ranger stations. There are numerous federal and state campgrounds in the Bitterroot Valley. There is little potential for this operation to affect access to the wilderness and recreational areas listed above. There is minimal potential for recreational opportunities on the reclaimed site, as the pond would be fairly small and the land is privately owned.
18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing?	[N]
19. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?	[Y] This field has been a hayfield in the past, although it is very close to the applicant's gravel and construction business office, shop and equipment storage area. There are other commercial properties including gravel extraction operations in the vicinity. Local people would notice a change in the daily operations at the site as topsoil is stripped and placed into stockpiles and gravel is extracted and crushed. This change in land use during the term of the operation could be perceived by some as a disruption of traditional lifestyles. This proposal would eliminate that hayfield and replace it with a pond surrounded by pastureland that would be suitable for commercial/residential development.
20. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?	[N]

IMPACTS ON THE HUMAN POPULATION	
RESOURCE	POTENTIAL IMPACTS AND MITIGATION MEASURES
21. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:	[N]

22. Alternatives Considered:

- A. No Action Alternative:** Under this alternative, the mine would not be permitted and the land would remain in agricultural use. The owner of the gravel resource would be denied full utilization of his property at this time. Gravel consumption is high in this area as a result of increasing population in general and in this part of the Bitterroot Valley specifically, and denial of this application would simply move the demand for this gravel and thus any impacts into other nearby gravel pit sources.
- B. Proposed Action:** The permit application would be approved as submitted. If implemented, this proposal would result in the disturbance of 16.9 acres within a 19.9-acre tract of land. A crusher and a series of settling ponds would be located within the permit area. Topsoil would be salvaged and placed into berms around the permit area to act as visual and noise barriers. Mining would occur down to 30 feet. The site would be reclaimed to 12 acres of pond and 7.9 acres of grassland. The site would then be suitable for residential or commercial development.

In addition, Blahnik has agreed to include the following agency mitigations (as listed in the Draft EA) into its Plan of Operation:

- Contact the Water Protection Bureau (WPB) to determine if an MPDES permit is needed for discharges into the Woodside Irrigation Ditch.
- Contact the WPB to determine if a Stormwater Discharge Permit is needed to cover stormwater runoff until such time as all runoff could be diverted into the pit and be contained within the permit boundary.
- Add vegetated topsoil or overburden berms around the residential area in the northwest corner of the permit area in addition to the berms proposed along the roads. All berms would be at least 8 feet above the adjacent land or road grade and have side slopes of 2:1 or flatter.
- Plant trees and shrubs such as those used in wind breaks between all berms and the permit boundary along the south, west, and north sides of the permit area to increase visual and noise buffering between the operation and the nearby residences. The actual varieties and planting designs must be approved by DEQ prior to installation.
- Plant a selection of suitable riparian and wetland species along the shoreline of the reclaimed pond to create wildlife habitat to support the proposed post-mining landuse. The seed mix is included in Attachment 3.
- Mine in such a fashion as to reach the location of the crossing over the Woodside Ditch as quickly as possible. This would allow for the construction of the bridge and reduce the truck traffic on Orchard Drive by allowing access from U.S. Highway 93.

23. Public Involvement, Agencies, Groups or Individuals contacted: Ravalli County Planning Office and Weed Management Board, Montana Natural Heritage Program, and the Montana State Historic Preservation Office.

Copies of the final EA will be distributed to the same residences and businesses as the draft EA, and also will be made available to the other members of the public upon request. The final EA is also available on the DEQ website at www.deq.mt.gov/ea/opencut.asp.

24. Other Governmental Agencies with Jurisdiction, List of Permits Needed: Montana Department of Environmental Quality for Air Quality Permit, MPDES permit, and Stormwater Discharge Permit; Mine Safety and Health Administration for safety permit, zoning clearance through Ravalli County.

25. Magnitude and Significance of Potential Impacts: Impacts are unlikely to be significant because of the proposed operation's location and the lack of population density, critical wildlife or plant species or habitats. The greatest impacts would be from the noise and visual impacts created by the mining operation. To the extent allowed by law, berms would be constructed around the perimeter of the permit area and trees and shrubs would be planted along the outside edge of those berms. These measures would help to minimize the sounds generated by the mining operation from reaching nearby residences but would not eliminate the noise. The berms and vegetation will also help to screen the site from the highway and adjacent properties. A buffer along the Woodside Irrigation Ditch would help to protect the integrity of the ditch. The fact that the operator proposes to leave a pond on the site with a water level at the level of the existing ground water table would help to minimize impacts to this shallow water table in the area that provides potable and irrigation water to nearby properties.

26. Regulatory Impact on Private Property: The analysis conducted in response to the Private Property Assessment Act indicates no impact to the use of private property from discretionary restrictions. The first two mitigations listed above that have been adopted by Blahnik are required to comply with the Montana Water Quality Act. The next two mitigations are necessary to comply with the visual and noise mitigation requirements of the Opencut Mining Act.

27. References:

- Montana Bureau of Mines and Geology. 2002. Groundwater Information Center Brief Wells Reports for Sections 1 and 12 T6N, R21W, an online data base at <http://mbmggwic.mtech.edu>. Retrieved May 13.
- Montana Natural Heritage Program. 2001. Martin P. Miller, Montana Natural Heritage Program to Toni Meyering, DEQ, regarding information on species of special concern in the vicinity of Blahnik Construction—JCSL North Site, Section 1, T6N, R21W, of Ravalli County. March 12.
- Montana State Historic Preservation Office. 2002. Personal communication between Damon Murdo, SHPO, and Kathleen Johnson, DEQ, regarding identified historic and cultural sites in Section 1, T6N, R 20 W and Section 30, T7N, R20W. July 22.
- Ravalli County Planning Board. 2000. Signed Zoning Compliance Form for Opencut Sand & Gravel Mining. February 1.
- Ravalli County Weed District. 2000. Approved Noxious Weed Control Plan for Blahnik Construction. March 31.
- Rygg, Philip J. 1998. Gravel Pits: The Effect on Neighborhood Property Values. February.
- Samdahl, Rod. 2000. Opencut Mining Field Report for Blahnik JCSL-North. February 23.
- US Department of Transportation-Federal Highway Administration and Montana Department of Transportation. 1997. Final Environmental Impact Statement U.S. Highway 93, Hamilton to Lolo, Montana. May.
- Wilusz, Kevin. 2003. E-mail from Kevin Wilusz, Blahnik Construction, to Rod Samdahl, DEQ. E-mail provides information responding to questions pertaining to the proposed plan for Blahnik JCSL North pit. August 19.

28. Recommendation for Further Environmental Analysis:

☐ EIS

☐ More Detailed EA

☒ No Further Analysis

29. EA Checklist prepared by:

Rod Samdahl

Name

Reclamation Specialist, IEMB

Title

Kathleen Johnson Environmental Impact Specialist

Name

Title

Supervisor,

Jerry Burke

Name

Opencut Mining Program, IEMB

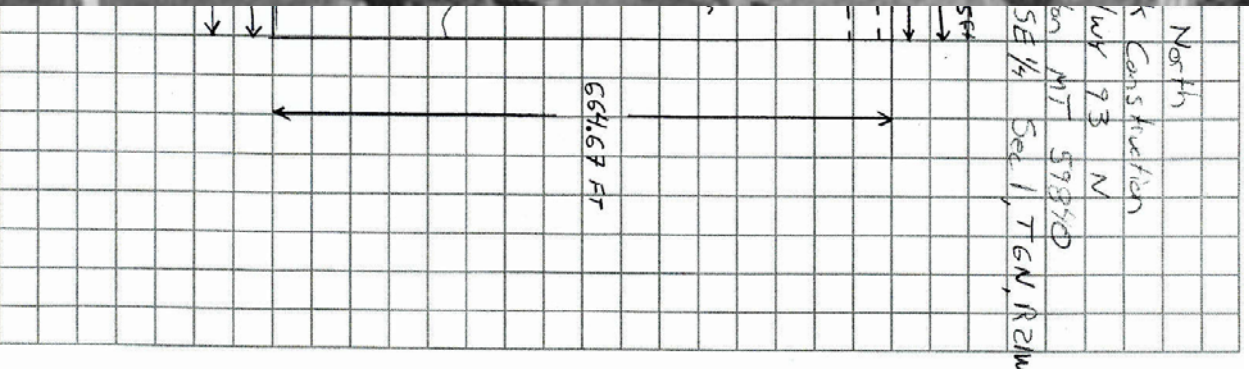
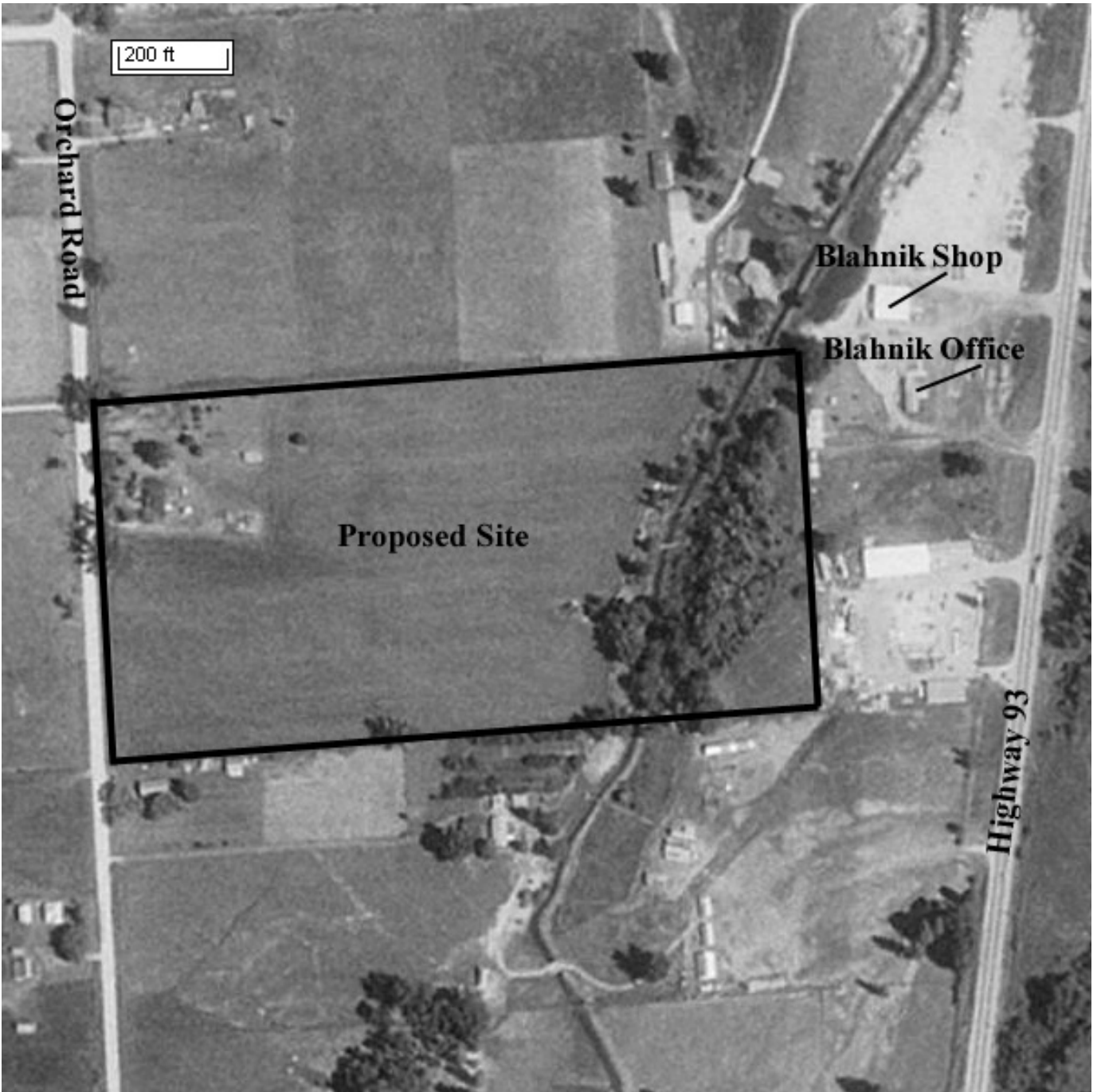
Title

30. EA Approved By:

Signature

Date

Neil Harrington, Chief, Industrial and Energy Minerals Bureau





BLAHNIK CONSTRUCTION, INC.
759 Highway 93 No. • Hamilton, MT 59840
(406) 961-4719 • Fax (406) 961-4857

JOB:

JCSL North Pit

SUBJECT:

Site Map

CALC. BY:

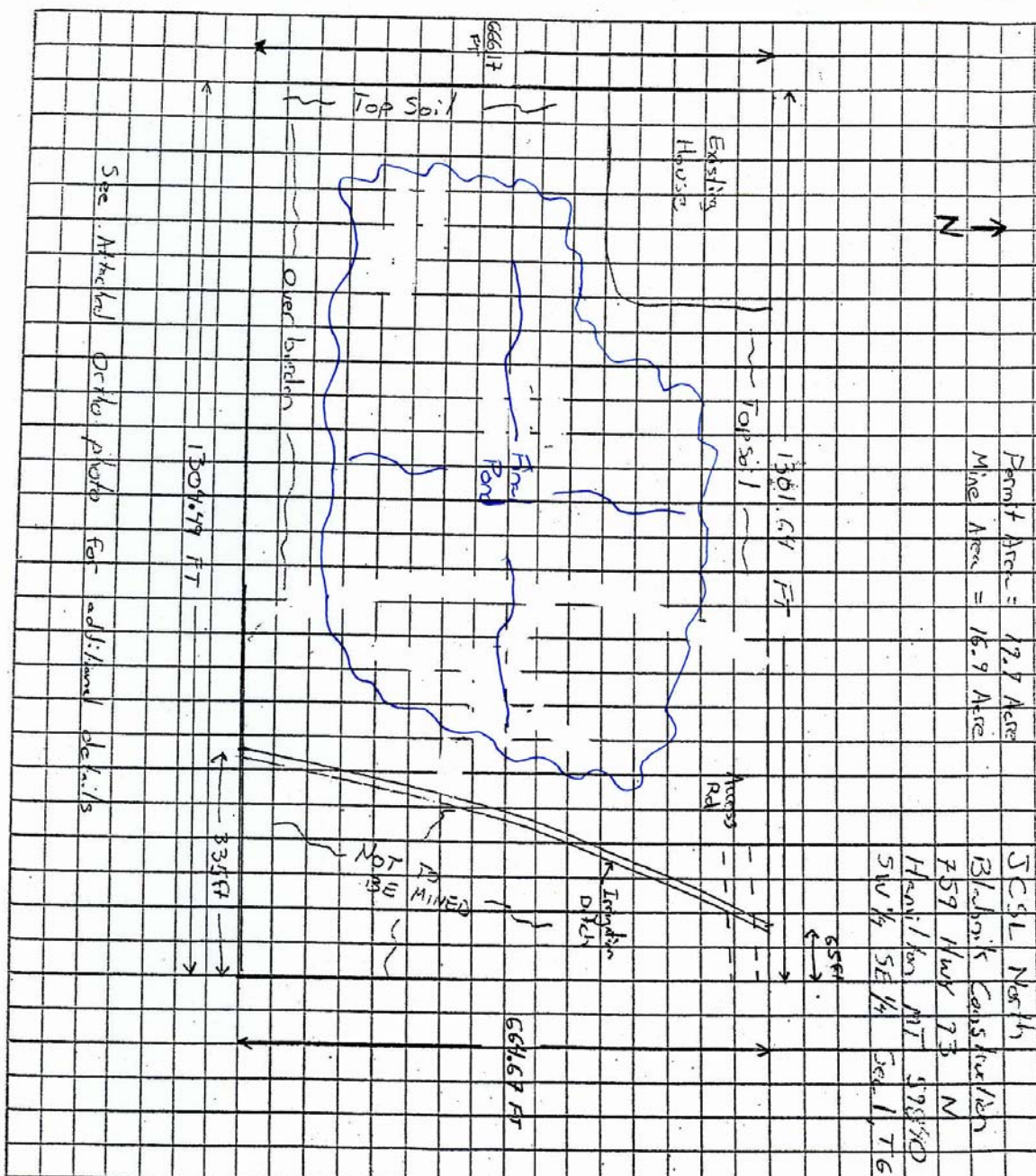
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DATE

JUN 12 2002

SHEET:

Department of
Environmental Quality
Kalispell Regional Office



ATTACHMENT 3

Wetland Seed Mix and Trees and Shrubs For Pond Edges

Wetland seed mix for pond edges and shallow water

SCIENTIFIC NAME	COMMON NAME	SEEDS PER SF	LBS/PLS Per AC
<i>Beckmannia syzigachne</i> “Egan”	American sloughgrass	2.5	0.10
<i>Calamagrostis canadensis</i>	Blue joint reedgrass	5.0	0.05
<i>Carex aquatilis</i>	Water sedge	5.0	0.19
<i>Carex microptera</i>	Small winged sedge	2.5	0.13
<i>Carex nebrascensis</i>	Nebraska Sedge	10	0.48
<i>Carex simulate</i>	Short-beaked sedge	5.0	0.22
<u>Carex utriculata</u>	Beaked sedge	5.0	0.62
<i>Deschampsia cespitosa</i> “Nortran”	Tufted hairgrass	5.0	0.09
<u>Distichlis spicata</u>	Inland saltgrass	2.5	0.18
<i>Eleocharis palustris</i>	Creeping spikerush	5.0	0.35
<i>Glyceria striata</i>	Fowl mannagrass	3.0	0.73
<i>Juncus balticus</i>	Baltic rush	5.0	0.03

<i>Juncus torreyi</i>	Torrey's rush	5.0	0.02
<i>Panicum virgatum</i>	Switchgrass	2.5	0.28
<i>Phalaris arundinacea</i>	Reed canarygrass	5.0	0.40
<i>Schoenoplectus acutus</i> or <i>Scirpus acutus</i>	Hardstem bulrush	2.5	0.27
<i>Schoenoplectus microcarpus</i> or <i>Scirpus microcarpus</i>	Small fruited bulrush	2.5	0.02
<i>Schoenoplectus pungens</i> or <i>Scirpus pungens</i>	Three-square bulrush	5.0	0.54
<i>Schoenoplectus tabernaemontani</i> or <i>Scirpus tabernaemontani</i>	Softstem bulrush	7.5	0.59
<i>Scirpus pallidus</i>	Cloaked or pale bulrush	2.5	0.02
Total seeds		88.0	5.31

This seeding mix is best used in the fall as several of the grass-like species such as the sedges, rushes, and bulrushes need the cold to break dormancy. If spring or summer seeding is needed omit these species and overseed with them in the fall.

Trees and shrubs for pond edges

SCIENTIFIC NAME	COMMON NAME
<i>Alnus incana ssp. tenuifolia</i>	Thin-leaf alder
<i>Amelanchier alnifolia</i>	Saskatoon service-berry
<i>Cornus stolonifera</i>	Red-osier dogwood
<i>Prunus virginiana</i>	Chokecherry
<i>Rosa woodsii</i>	Woods rose
<i>Salix exigua</i>	Coyote willow
<i>Salix rigida</i> var <i>American McKay</i>	American McKay's willow

Trees and shrubs should be planted as bare root or containerized plants in 3-4 groupings of 10-15 plants around the pond before, if possible, the pond edge is planted with grasses and grass-like plants in the wetland seeding mix above.

